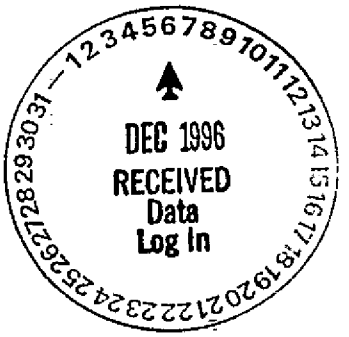
LK8181-LAS

0046809

LOCKHEED MARTIN

Lockheed Analytical Services

Ms. Joan Kessner
Bechtel Hanford, Inc.
3350 George Washington Way
MISN B1-35
Richland, WA 99352



ANALYTICAL DATA REPORT

FOR

CHLORIDE, NITRATE, NITRITE, SULFATE, FLUORIDE, PHOSPHATE, TOTAL URANIUM BY KPA, STRONTIUM-90, TECHNETIUM-99, AND TRITIUM

LOG-IN NUMBER:	L8181
QUOTATION NUMBER:	Q400000-B
SAF NUMBER:	B97-023
DOCUMENT FILE NUMBER:	1022596
BHI DOCUMENT FILE NUMBER.:	413
SDG NUMBER:	LK8181

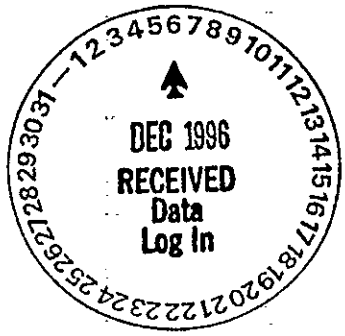
0001

Lockheed Environmental Systems & Technologies Co.
Lockheed Analytical Services
975 Kelly Johnson Drive Las Vegas, Nevada 89119-3705
Telephone 702-361-0220 800-582-7605 Facsimile 702-361-8146

LOCKHEED MARTIN

December 3, 1996

Ms. Joan Kessner
Bechtel Hanford, Inc.
3350 George Washington Way
MISN B1-35
Richland, WA 99352



RE:	Log-in No.:	L8181
	Quotation No.:	Q400000-B
	SAF No.:	B97-023
	Document File No.:	1022596
	BHI Document File No.:	413
	SDG No.:	LK8181

The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on October 22, 1996. The temperature of the cooler upon receipt was 4°C. Sample containers received agree with the chain-of-custody documentation. All sample containers were received intact. All samples were not received in time to meet the analytical holding time requirements.

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Mary Wolf at (702) 361-3955, extension 311. If you are unable to contact the client services representative, please call Mary B. Ford, client services manager, at extension 326.

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Sincerely,

Mary K. Wolf

Mary K. Wolf
Client Services Representative

cc: Client Services
Document Control

CASE NARRATIVE
INORGANIC NON METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike (predigestion) sample(s), duplicate sample(s).

Preparation and Analysis Requirements

- Two solid waste samples were received for LK8181 and analyzed in batch 1022 bh for selected analytes to be analyzed in client-specified order as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOJCS3	L8181-2	DUP, MS	300.0 Chloride, Fluoride, Nitrate-Nitrogen, Nitrite Nitrogen, Orthophosphate and Sulfate

Holding Time Requirements

- The samples were received and analyzed within method-specific holding time except for the following:

  For Method 300.0 Nitrate-Nitrogen, Nitrite-Nitrogen and Orthophosphate, these samples were received and analyzed outside of the method-specific holding time and the associated samples are flagged with an "H".

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Kay McCann
Prepared By

December 3, 1996
Date

CASE NARRATIVE
INORGANIC TOTAL URANIUM ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: instrument calibration, initial and continuing calibration verification, quench monitoring standards, instrument background analysis, method blanks, yield tracer, laboratory control samples, matrix spike samples, and matrix spike duplicate samples.

Preparation and Analysis Requirements

All samples were received on October 22, 1996. The samples were logged in as L8181 and were prepared and analyzed in batch 1022 bt.

Holding Time Requirements

All holding time requirements were met.

Total Uranium

The Total Uranium analysis was performed using LAL-91-SOP-0168. All samples were prepared in Workgroup U TOTAL KPA LAL-0168 42801 with a Method Blank (MBB1), Laboratory Control Sample (LCS1), Duplicate (DUP1) and Matrix Spike (MS1). No problems were encountered during preparation or analysis. All QC criteria were met and no reanalysis was performed.

Shellee McGrath
Prepared By

November 19, 1996
Date

CASE NARRATIVE
RADIOCHEMISTRY ANALYSES

The routine calibration and quality control (QC) analyses performed for this batch include as applicable: instrument calibration, initial and continuing calibration verification, quench monitoring standards, instrument background analysis, method blanks, yield tracer, laboratory control samples, matrix spike samples, and duplicate samples.

NOTE: Chemical recoveries and minimum detectable activities (MDAs) can be found on the preparation sheets and calculation sheets on the attached raw data for each method.

Holding Time Requirements

All holding time requirements were met.

Gas Proportional Counter

Analytical Method Strontium-90

The strontium-90 analysis was performed using standard operating procedure (SOP), LAL-91-SOP-0065. The samples were analyzed in workgroups 43149 and 43582. The samples in workgroup 43149 were re-analyzed in workgroup 43582 due to out-of-criteria laboratory control sample (LCS) and matrix spike (MS) recoveries. No analyses from workgroup 43149 were reported. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and MS recoveries were within QC criteria. The duplicate (DUP) recoveries were within QC criteria. No other re-analyses were performed.

Liquid Scintillation Counter

Analytical Method Technetium-99

The technetium-99 analysis was performed using SOP, LAL-91-SOP-0169. The samples were analyzed in workgroup 43151. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and MS recoveries were within QC criteria. The DUP recoveries were within QC criteria. The quench value was within curve limitations. No re-analyses were performed.

Analytical Method Tritium

The tritium analysis was performed using SOP, LAL-91-SOP-0066. The samples were analyzed in workgroup 43158. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and MS recoveries were within QC criteria. The DUP recoveries were within QC criteria. The quench value was within curve limitations. No re-analyses were performed.

Andrea Tippett
Prepared By

November 24, 1996
Date

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST L8181	B97-023-48	Page 1 of 1

Collector A. Rizzo / D. Bowers	**Company Contact** Jane Borghese	**Telephone No.** (509) 373-4790	**Project Coordinator** Koerner, CC
Data Turnaround 45 Days			
Project Designation Pre-Startup Sampling for 100-HR-3 Interim Action Monitoring	**Sampling Location** 100 H and 100 D		**SAF No.** B97-023
Ice Chest No. SML-412	**Field Logbook No.** EL-1259		**Method of Shipment** Federal Express
Shipped To Lockheed	**Offsite Property No.** W97-0001-2		**Bill of Lading/Air Bill No.** 2771634162

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
Maintain samples between 2 degrees C and 6 degrees C.

Preservation	None	HNO3 to pH <2	None	Cool 4C	HCl to pH <2	HNO3 to pH <2				
Type of Container	P	G	G	P	P	P				
No. of Container(s)	1	1	1	1	4	4				
Volume	20ml	~~40ml~~ 500ml	500ml	500ml	1000ml	1000ml				
SAMPLE ANALYSIS	Activity Scan	Total Uranium	Tritium - H3	IC Anions - 300.0 (Nitrogen in Nitrate)	Technetium-99	Strontium-89,90 – Total Sr				

Sample No.	Matrix*	Sample Date	Sample Time										
B0JCS3	Water	10-18-96	1038	X	X	X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
D. Bowers / Doug Bowers	10-18-96/1410	[signature] Ett BechHan	1410 10-18-96
[signature] Ell BechHan	0830 10-21-96		

SPECIAL INSTRUCTIONS
** The ERC Contractor acknowledges the 48-hour holding time for nitrate is not likely achievable.

Matrix*
S = Soil
SE = Sediment
SO = Solid
SL = Sludge
W = Water
O = Oil
A = Air
DS = Drum Solids
DL = Drum Liquids
T = Tissue
WI = Wipe
L = Liquid
V = Vegetation
X = Other

LABORATORY SECTION	Received By: A. Miller	Title: Sample Custodian	Date/Time: 10-22-96 / 0900
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

9613.10011

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0JCS3	Date Collected: 18-OCT-96
Matrix: Water	Date Received: 22-OCT-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Chloride	mg/L	300.0	8.0	0.020		23-OCT-96	42794	L8181-2
Fluoride	mg/L	300.0	0.20	0.10		06-NOV-96	42795	L8181-2
Nitrate-N	mg/L	300.0	7.0	0.020	H	23-OCT-96	42796	L8181-2
Nitrite-N	mg/L	300.0	< 0.0020	0.010	HU	23-OCT-96	42797	L8181-2
Ortho Phosphate	mg/L	300.0	< 0.0020	0.10	HU	28-OCT-96	42798	L8181-2
Sulfate	mg/L	300.0	52.	0.10		23-OCT-96	42799	L8181-2

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT
Account Name: Bechtel Hanford, Inc. * Richland, WA
Project Name: BECHTEL-HANFORD
Project Desc: Bechtel Hanford Project

Client Sample ID: B0JCS3
Date Collected: 18-OCT-96
Matrix: Water

Login Number: L8181
Date Received: 22-OCT-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Uranium	KPA	42801	5.96	0.31	0.84		ug/L	18-NOV-96	L8181-3

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT
Account Name: Bechtel Hanford, Inc. * Richland, WA
Project Name: BECHTEL-HANFORD
Project Desc: Bechtel Hanford Project

Client Sample ID: B0JCS3
Date Collected: 18-OCT-96
Matrix: Water

Login Number: L8181
Date Received: 22-OCT-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
H-3	LAL-0066	43158	2520	350	210		pCi/L	07-NOV-96	L8181-4

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT
Account Name: Bechtel Hanford, Inc. * Richland, WA
Project Name: BECHTEL-HANFORD
Project Desc: Bechtel Hanford Project

Client Sample ID: B0JCS3
Date Collected: 18-OCT-96
Matrix: Water

Login Number: L8181
Date Received: 22-OCT-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Tc-99	LAL-0169	43151	10.1	4.7	7.2		pCi/L	19-NOV-96	L8181-5

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT
Account Name: Bechtel Hanford, Inc. * Richland, WA
Project Name: BECHTEL-HANFORD
Project Desc: Bechtel Hanford Project

Client Sample ID: B0JCS3
Date Collected: 18-OCT-96
Matrix: Water

Login Number: L8181
Date Received: 22-OCT-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Sr-89,90	LAL-0065	43582	0.21	0.33	0.55		pCi/L	19-NOV-96	L8181-9